Lissting Program Arduino

```
#include <Adafruit_Fingerprint.h>
#include <Keypad.h>
#include <SoftwareSerial.h>
#include <LiquidCrystal.h>
#include <Password.h>
SoftwareSerial mySerial(2, 3);
Adafruit_Fingerprint finger = Adafruit_Fingerprint(&mySerial);

byte sensorsentuh= 13;
int nilaisensor;
byte irf= 12;
int idFinger;
byte currentLength = 0;
#define irf_ON 1
#define irf_OFF 0
#define irf_1 12



boolean currentState = HIGH;
boolean lastState = HIGH;
boolean irfState = HIGH;
Password password = Password("2016");//Password bisa di ubah ubah

LiquidCrystal lcd(A0, A1, A2, A3, A4, A5);// pin lcd yang di gunakan



const byte ROWS= 4; //baris pada keypad
```

```
const byte COLS= 4; //Kolom pada keypad

//inisialisasi led dan irf sebagai output bila password betul maka akan menyala irf,
//dan bila password salah akan menyala led merah



/*keymap mendefinisikan tombol ditekan sesuai
dengan baris dan kolom seperti muncul pada keypad*/
char keys[ROWS][COLS] =
{
{'1', '2', '3', 'A'},
{'4', '5', '6', 'B'},
{'7', '8', '9', 'C'},
{'*', '0', '#', 'D'}
};


byte rowPins[ROWS]= {11,10,9,8};
byte colPins[COLS]= {7,6,5,4};


Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );


void setup(){
  Serial.begin(9600);
  finger.begin(57600);
  keypad.addEventListener(keypadEvent);
```

```
 lcd.begin(16, 2);
 lcd.setCursor(0, 0);
 lcd.print("DoorlockOtomatis");
 lcd.setCursor(5, 1);
 lcd.print("T & A");
 delay(4000);
 lcd.clear();
 lcd.setCursor(1, 0);
 lcd.print("Selamat Datang");
 lcd.setCursor(3 , 1);
 lcd.print("Di Tekkom");
 delay(4000);
 lcd.clear();


 pinMode(sensorsentuh, INPUT);
 pinMode(irf, OUTPUT);

 if (finger.verifyPassword()) {
  Serial.println("FingerPrint Sensor Ditemukan!");
 } else {
  Serial.println("FingerPrint Sensor Tidak Ditemukan! :(");
  while (1) { delay(1); }
 }

}

void loop(){
```

```
FINGERPRINT();
nilaisensor= digitalRead(sensorsentuh);
Serial.println(nilaisensor);

lcd.setCursor(1, 0);
lcd.print("Masukan Akses");
lcd.setCursor(0,1);
lcd.print(" ");
keypad.getKey();;



if(idFinger >= 0){
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Akses Sidik Jari");
  lcd.setCursor(4, 1);
  lcd.print("Diterima");
  digitalWrite(irf, HIGH);
  delay(5000);
  lcd.clear();
  lcd.setCursor(1, 0);
  lcd.print("Masukan Akses");
  lcd.setCursor(0,1);
  lcd.print(" ");
  keypad.getKey();;
  digitalWrite(irf, LOW);
}
if(nilaisensor == 1){
  lcd.clear();
```

```
   lcd.setCursor(2, 0);
   lcd.print("Terbuka dari");
   lcd.setCursor(5, 1);
   lcd.print("Dalam");
   digitalWrite(irf, HIGH);
   delay(5000);
   lcd.clear();
   lcd.setCursor(1, 0);
   lcd.print("Masukan Akses");
   lcd.setCursor(0,1);
   lcd.print(" ");
   keypad.getKey();;
   digitalWrite(irf, LOW);
  }

}

//----------KEYPAD---------//
void checkPassword(){
  if(password.evaluate()){
     digitalWrite(irf_1,irf_ON);
     lcd.clear();
     lcd.setCursor(3,0);
     lcd.print("Akses Sandi");
     lcd.setCursor(4,1);
     lcd.print("Diterima");
     Serial.println("Berhasil Dari keypad");
     delay(5000);//Lama waktu irf
     password.reset();
```

```
    digitalWrite(irf_1, irf_OFF);
  }
  else {

    lcd.clear();
    lcd.setCursor(1, 0);
    lcd.print("Akses Ditolak");
    lcd.setCursor(0
    , 1);
    lcd.print("Salah coba lagi");
    delay(2000);//lama led on
    password.reset();

  }
}

void keypadEvent(KeypadEvent eKey){

 switch (keypad.getState()){
   case PRESSED:
 lcd.setCursor(0,1);
   lcd.print(eKey);
   Serial.println(eKey);
 switch (eKey){
   case '*': checkPassword();
   lcd.clear(); currentLength=0;break;
   case '#': password.reset();
   lcd.clear();currentLength=0; break;
   default:// password.append(eKey);
```

```
        password << eKey;
        currentLength++;

      //Print some feedback.
      lcd.setCursor(0,1);
      lcd.print(" ");
      for (byte i=0; i<currentLength; i++){
         lcd.print('*');
      }

  }
 }
}


//-------------------------------------------------------FINGERPRINT-----------------------------------------------//
void FINGERPRINT(){
 idFinger= getFingerprintIDez();
 delay(50);
}

//-------------------------------------------------------PROSES FINGERPRINT-----------------------------------------//

uint8_t getFingerprintID() {
 uint8_t p = finger.getImage();
 switch (p) {
   case FINGERPRINT_OK:
     Serial.println("Image taken");
     break;
```

```
  case FINGERPRINT_NOFINGER:
    Serial.println("No finger detected");
    return p;
  case FINGERPRINT_PACKETRECIEVEERR:
    Serial.println("Communication error");
    return p;
  case FINGERPRINT_IMAGEFAIL:
    Serial.println("Imaging error");
    return p;
  default:
    Serial.println("Unknown error");
    return p;
}

// OK success!

p = finger.image2Tz();
switch (p) {
  case FINGERPRINT_OK:
    Serial.println("Image converted");
    break;
  case FINGERPRINT_IMAGEMESS:
    Serial.println("Image too messy");
    return p;
  case FINGERPRINT_PACKETRECIEVEERR:
    Serial.println("Communication error");
    return p;
  case FINGERPRINT_FEATUREFAIL:
    Serial.println("Could not find fingerprint features");
```

```
    return p;
  case FINGERPRINT_INVALIDIMAGE:
    Serial.println("Could not find fingerprint features");
    return p;
  default:
    Serial.println("Unknown error");
    return p;
}

// OK converted!
p = finger.fingerFastSearch();
if (p == FINGERPRINT_OK) {
  Serial.println("Found a print match!");
} else if (p == FINGERPRINT_PACKETRECIEVEERR) {
  Serial.println("Communication error");
  return p;
} else if (p == FINGERPRINT_NOTFOUND) {
  Serial.println("Did not find a match");
  return p;
} else {
  Serial.println("Unknown error");
  return p;
}

// found a match!
Serial.print("Found ID #"); Serial.print(finger.fingerID);
Serial.print(" with confidence of "); Serial.println(finger.confidence);

return finger.fingerID;
```

```
}

// returns -1 if failed, otherwise returns ID #
int getFingerprintIDez() {
  uint8_t p = finger.getImage();
  if (p != FINGERPRINT_OK)  return -1;

  p = finger.image2Tz();
  if (p != FINGERPRINT_OK)  return -1;

  p = finger.fingerFastSearch();
  if (p != FINGERPRINT_OK)  return -1;

  // found a match!
  Serial.print("Found ID #"); Serial.print(finger.fingerID);
  Serial.print(" with confidence of "); Serial.println(finger.confidence);
  return finger.fingerID;
}

//--------------------------------END FINGERPRINT-------------------------------------------//
```